

**WHAT IS CLAIMED IS:**

1. Isolated genetic material from human Chromosome 5 of an individual that indicates the presence of dyslexia or a predisposition to develop dyslexia in the individual from whom the material was obtained, the material comprising an allele of each of at least two microsatellite markers flanking SEQ ID NO:1 in combination on Chromosome 5: Haplotype #8 the 190,198 microsatellite combination of D5S1487/D5S617; Haplotype #9 the 214,190 microsatellite combination of D5S1487/D5S617; and Haplotype #10 the 214,192 microsatellite combination of D5S1487/D5S617.

2. Isolated genetic material from human Chromosome 5 of an individual that indicates the presence of dyslexia or a predisposition to develop dyslexia in the individual from whom the material was obtained, the material comprising:

a) isolated genetic material according to claim 1; in combination with either

b) an isolated polynucleotide comprising at least about 17 consecutive nucleotides of SEQ ID NO:1 including residue 2285, where residue 2286 has an A to C substitution; or comprising at least about 17 consecutive nucleotides of SEQ ID NO:1 including residue 3281, where residue 3282 has a T to G substitution; or comprising at least about 25 consecutive nucleotides of SEQ ID NO:1 including residue 2285, where residue 2286 has an A to C substitution; or comprising at least about 25 consecutive nucleotides of SEQ ID NO:1 including residue 3281, where residue 3282 has a T to G substitution; or comprising at least about 40 consecutive nucleotides of SEQ ID NO:1 including residue 2285, where residue 2286 has an A to C substitution; or comprising at least about 40 consecutive nucleotides of SEQ ID NO:1 including residue 3281, where residue 3282 has a T to G substitution; or

c) isolated genetic material from human Chromosome 5 of an individual that indicates the presence of dyslexia or a predisposition to develop dyslexia in the individual from whom the material was obtained, the material comprising a sufficient portion of SEQ ID NO:1 comprising (Haplotype #1) an A to T substitution at residue 879 and a G to A substitution at residue 2613; or comprising (Haplotype #2) an A to C substitution at residue 424, a C to A substitution at residue 554, a C to T substitution at residue 1346, an A to C substitution at residue 2286, a G to A substitution at residue 2314 and a G to A substitution at residue 2613; or comprising (Haplotype #3) a G to A substitution at residue 1145 and a G to A substitution at residue 2613; or (Haplotype #4) comprising an A to C substitution at residue 424, a C to A substitution at residue 554, a C to T substitution at residue 1346, a G to A substitution at

residue 2314, a G to A substitution at residue 2613 and a T to G substitution at residue 3282; or comprising (Haplotype #5) an A to C substitution at residue 424, a C to A substitution at residue 554, an A to T substitution at residue 879, a C to T substitution at residue 1346, a G to A substitution at residue 2314, a G to A substitution at residue 2613 and a T to G substitution at residue 3282; or comprising (Haplotype #6) an A to T substitution at residue 879; or comprising (Haplotype #7) an A to C substitution at residue 2286 and a G to A substitution at residue 2613; where except for these substitutions, residue 424 is A, residue 554 is C, residue 879 is A, residue 985 is C, residue 1145 is G, residue 1346 is C, residue 2275 is A, residue 2286 is A, residue 2314 is G, residue 2453 is C, residue 2613 is G, residue 3282 is T; or

d) both b) and c).

3. A method of diagnosing dyslexia or a predisposition to develop dyslexia, the method comprising:

a) providing a sample from an individual containing genetic material from Chromosome 5; and

b) analyzing the genetic material for the presence of one or more than one of Haplotype #8 through Haplotype #10 according to claim 1, or isolated genetic material according to claim 2;

where the presence of one or more than one of Haplotype #8 through Haplotype #10 according to claim 1 or isolated genetic material according to claim 2 indicates a diagnosis of dyslexia or a predisposition to develop dyslexia.

4. The method of claim 3, where the sample is obtained *in utero* or post-mortem.

5. The method of claim 3, additionally comprising administering phonological testing to the individual to confirm the diagnosis of dyslexia.

6. The method of claim 3, additionally comprising analyzing genetic material from the individual for the presence of one or more than one genetic marker for dyslexia or for a predisposition to develop dyslexia on a chromosome other than Chromosome 5 to confirm the diagnosis of dyslexia.

7. The method of claim 6, where the chromosome other than Chromosome 5 is selected from the group consisting of Chromosomes 1p, 2p, 3p, 3q, 4q, 6p21.3, 6q, 8p, 9p, 11p, 13q, 15q, 18p, 18p11.2, 21q, and Xq.

8. The method of claim 6, where the chromosome other than Chromosome 5 is

selected from the group consisting of Chromosomes 6p21.3 and 18p11.2.

9. A method of ameliorating the symptoms of dyslexia or preventing dyslexia in an individual, the method comprising:

- a) diagnosing dyslexia or a predisposition to develop dyslexia in the individual according to the method of claim 3; and
- b) treating the individual.

10. The method of claim 9, where treating the individual comprises administering phonological training to the individual.

11. A method of classifying a dyslexic individual or group of dyslexic individuals comprising:

- a) diagnosing dyslexia or a predisposition to develop dyslexia in the individual or individuals according to the method of claim 3; and
- b) assigning a classification to the individual or individuals based on the variant or haplotype identified as a result of the diagnosis.